

CLAIMS

What is claimed is:

1. A method for performing transport format combination indicator (TFCI) processing in a wireless communications system, comprising the steps of:
 - collecting received samples for a timeslot;
 - processing the received samples for the timeslot that do not require a transport format combination (TFC) code list or a TFC code list valid indicator;
 - receiving a TFCI value for the timeslot;
 - processing the received TFCI at the timeslot rate for the timeslot;
 - producing the TFC code list and the TFC code list valid indicator; and
 - processing samples in the timeslot that require the TFC code list or the TFC code list valid indicator.
2. A method for full discontinuous (DTX) control in a receiver in a wireless communication system, comprising the steps of:
 - (a) determining if full DTX is allowed in the current timeslot;
 - (b) if full DTX is not allowed in the current timeslot, then setting a full DTX indicator for the previous frame to false and ending the method;
 - (c) if full DTX is allowed in the current timeslot, then
 - (d) determining if a special burst has been detected;
 - (e) if a special burst has been detected, then setting the full DTX indicator for the previous frame to true and ending the method;
 - (f) if a special burst has not been detected, then
 - (g) determining if a transport format combination indicator (TFCI) has been accepted;
 - (h) if the TFCI has been accepted, then setting the full DTX indicator for the previous frame to false and ending the method; and
 - (i) if the TFCI has not been accepted, then ending the method without setting the full DTX indicator for the previous frame.

3. The method according to claim 2, wherein step (a) includes determining whether the receiver is operating in synchronization phase one.

4. The method according to claim 2, wherein step (d) includes evaluating a received TFCI value; and

comparing the quality of a received TFCI with a first threshold, whereby a special burst is detected if the received TFCI value is zero and if the quality of the received TFCI meets the first threshold.

5. The method according to claim 2, wherein step (g) includes

comparing the quality of a received TFCI with a second threshold; and

evaluating a TFCI valid indicator, whereby the TFCI is accepted if the quality of the received TFCI meets the second threshold and the TFCI valid indicator is true.

6. The method according to claim 2, further comprising the step of using the full DTX indicator for the previous frame in an end of full DTX detection algorithm, wherein a determination is made whether a coded composite transport channel has exited full DTX.

7. The method according to claim 2, further comprising the step of using the full DTX indicator for the previous frame in a suppress during full DTX algorithm, wherein if the full DTX indicator is true, further transmission of transport blocks and their corresponding cyclic redundancy checks is suppressed.

8. A method for generating a transmit power control (TPC) bit in a wireless communication system, comprising the steps of:

receiving a measured signal to interference ratio (SIR) value, a virtual SIR value, and a full discontinuous transmission (DTX) indicator for a previous frame;

evaluating the full DTX indicator;

if the full DTX indicator is false, then using the measured SIR to generate the TPC bit and ending the method;

else if the full DTX indicator is true, then using the virtual SIR value to generate the TPC bit.

9. A method for improving a decoded transport format combination indicator (TFCI) value in a wireless communications system, comprising the steps of:

(a) determining whether the current timeslot is the first timeslot allocated to a coded composite transport channel (CCTrCH);

(b) if the current timeslot is the first allocated timeslot, then using the decoded TFCI value from the current timeslot for constructing a transport format combination (TFC) code list and setting a TFC code list valid flag;

(c) determining whether the current timeslot contains a repeated TFCI value for the CCTrCH;

(d) if the current timeslot contains a repeated TFCI value, then combining all of the decoded TFCI values to obtain an improved estimate of the TFCI word, determining if the improved estimate of the TFCI word is different than a previous estimate of the TFCI word, and if the improved estimate of the TFCI word is different, then using the improved estimate of the TFCI word for constructing the TFC code list and setting the TFC code list valid flag;

(e) determining if the current timeslot is the last timeslot;

(f) if the current timeslot is not the last timeslot, then waiting for the next timeslot and returning to step (a);

(g) if the current timeslot is the last timeslot, then ending the method.

10. A method for obtaining a transport format combination indicator (TFCI) value, comprising the steps of:

collecting received samples;

processing the received samples to obtain soft TFCI symbols;
decoding the soft TFCI symbols to obtain a TFCI value;
evaluating the TFCI value to determine if it is a valid index of a transport format combination set (TFCS);
if the TFCI value is a valid index of the TFCS, then
 using the TFCI value obtained in said decoding step and ending the method;
if the TFCI value is not a valid index of the TFCS, then
 selecting a valid TFCI value and using the selected TFCI value.

11. The method according to claim 10, wherein said selecting step includes selecting a decoded TFCI value from a previous frame.

12. The method according to claim 10, wherein said selecting step includes selecting a decoded TFCI value from a previous minimum transmission time interval.

13. The method according to claim 10, wherein said selecting step includes selecting a TFCI value corresponding to the first entry in the TFCS.

14. The method according to claim 10, wherein said selecting step includes selecting a TFCI value from a list of recently decoded TFCI values, wherein the selected TFCI value has been output the most frequently.